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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,044	08/28/2003	Ikuya Yamashita	101175-00035	6945
4372	7590	04/14/2009		
ARENT FOX LLP 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			EXAMINER MERKLING, MATTHEW J	
			ART UNIT	PAPER NUMBER
			1795	
			NOTIFICATION DATE	DELIVERY MODE
			04/14/2009 ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com  
IPMatters@arentfox.com  
Patent\_Mail@arentfox.com

# Office Action Summary

## Application No.

10/650,044

## Applicant(s)

YAMASHITA ET AL.

## Examiner

MATTHEW J. MERKLING

## Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/21/08 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fairlie et al. (WO 00/69773) as evidenced by Sircar et al. (US 6,103,143).

**Regarding claims 5, 7 and 8**, Fairlie discloses a hydrogen supply unit comprising:

a reforming means for generating hydrogen gas by reforming a source gas (page 5 lines 31-35);

a first purifying means connected to the reforming means for purifying hydrogen gas reformed by the reforming means (page 5 lines 31-35);

a first storage means for storing and supplying the hydrogen gas reformed by said reforming means to a first fuel cell (page 20 lines 28-31);

a first supply line connecting the first purifying means to the first storage means and supplying the hydrogen gas from the reforming means to the first storage means (page 5 lines 21-31, where Fairlie discloses that the hydrogen produced can be fed to a number of different types of 'hydrogen fuel users', which includes a fuel cell or a storage container);

a pressurization means (page 2 lines 22-29), provided in the first supply line between the first purifying means and the first storage means, for pressurizing the hydrogen gas to be stored by the first storage means.

While Fairlie does not explicitly disclose a 'second storage means' which feeds a second fuel cell, with a second supply line, such a modification is nothing more than a duplication of parts. Providing a second storage means, second fuel cell, second purifying means, and a second supply line would amount to a mere duplication of parts. Fairlie does disclose multiple users that receive hydrogen from the single hydrogen generating source. It has been held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Furthermore, Fairlie discloses multiple users that utilize the same hydrogen source (for example, see Fig. 1). Fairlie discloses multiple uses for the hydrogen, such as a stationary generator as well as to power a vehicle (as mentioned above). Fairlie, however does not teach a second purifying means located in the second supply line.

However, it is well known in the art that different users of a hydrogen source often require different purities (see Sircar col. 8 line 67 – col. 9 line 2). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to add another purification means (duplicate) in the second supply line to supply a second user with a different purity hydrogen than that which is supplied to a first user.

Regarding limitations recited in claims 5 and 8 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP §2114 and 2115. Further, process limitations do not have a patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states “Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.

**Regarding claim 6**, Fairlie further discloses a control system that measures amount of available energy (hydrogen) and operates the hydrogen production means (reformer) based on the amount of hydrogen remaining and demand of the users (see page 20 lines 3-20).

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fairlie et al. (WO 00/69773) as applied to claim 8 above, and further in view of Ogino (JP 10-139401).

**Regarding claims 3 and 4**, while Fairlie discloses a hydrogen storage means that stores hydrogen supplied from a reformer, Fairlie fails to teach:

- a hydrogen absorbing alloy in the hydrogen storage means,
- said storage means releases the hydrogen gas from a hydrogen absorbing alloy by use of waste heat of said reforming means or waste heat of said fuel cell,

Ogino also discloses a hydrogen storage means that stores hydrogen supplied from a reformer.

Ogino teaches a preferable storage means that stores hydrogen by use of a hydrogen absorbing alloy and subsequently releases said hydrogen from the alloy by heat exchange from waste heat from the fuel cell (paragraph 108).

As such, it would have been obvious to one of ordinary skill in the art to utilize the absorbing alloy and hydrogen releasing method of Ogino, in the hydrogen supply unit of Fairlie, in order to preferably store and remove hydrogen in said storage tank.

#### ***Response to Arguments***

5. Applicant's arguments filed 11/21/08 have been fully considered but they are not persuasive.

On pages 7 and 8, Applicant argues that Fairlie does not teach a second purifying means located in the second supply line. The examiner notes that Fairlie does not explicitly state that a second purifying means is located in a second supply line, however, as explained above, providing hydrogen from a single source to multiple users can often require different purities to each user. As such, adding a duplicate purifying means to a second supply line which leads to a second user would have been obvious to one of ordinary skill in the art to merely supply a different purity hydrogen to a second user. The same argument can be said for a second

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pressurization means. Depending on the desired pressure of the hydrogen user, providing a duplicate pressurization means would have been obvious to one of ordinary skill in the art.

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. MERKLING whose telephone number is (571)272-9813. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. M./  
Examiner, Art Unit 1795

/Alexa D. Neckel/  
Supervisory Patent Examiner, Art Unit 1795